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ABSTRACT

            The Behavior Analysis (BA) approach to Project Follow
Through, a federally funded education intervention program, has
reversed the trend of academic failure of poor children by improving
the educational experience of poor children from 12 communities in
the urban East, Midwest, rural South, and on Indian reservations in
the West. The BA model is supported by a multifaceted evaluation
strategy, predicated on four systematic process and outcome
evaluation techniques. Each serves a unique function, is used on a
continuous and regular basis, and is designed to complement the
others. The first strategy, continuous progress assessment, is a
computer-based system for monitoring the weekly academic progress of
each child and classroom toward prescribed year-end curriculum goals.
The second evaluation technique is the annual testing of BA children
and a comparable sample of non-BA children on a standardized
achievement test. The third strategy calls for regular formal and
informal observations of the classroom which allows the determination
of possbile needs for additional and/or specialized training of the
classroom staff. The fourth evaluation measure is a survey of
consumer satisfaction of the program and its effects which provides a
measure of the social validity of the program. (Author)

ED126125

The Behavior Analysis Follow Through

Evaluation Strategy: A Multifaceted Approach[1]

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Project Follow Through

Project Follow Through, formally established under the Economic Opportunity Act in 1968 as part of the war on poverty, is a federally-funded educational intervention program for early elementary grade school children (Kg-3). Although Follow Through has not received the publicity of most poverty programs, it has been and continues to be one of the more successful programs.

The intent of the program, as originally conceived, was to provide comprehensive educational, medical and social services to poor children while simultaneously involving parents directly in the program planning and decision-making processes. The plan of implementation for the educational component, known as "planned variation," was based on the assumption that no single instructional approach was appropriate to all situations; therefore a number of diverse, experimental educational models would be implemented and evaluated. Follow Through has been acclaimed as the largest social experiment ever launched, and described as the nation's largest research and evaluation program which has developed approaches to early elementary compensatory education.

The Follow Through program, under the planned variation concept, consists of several educational models, developed and guided by a sponsor or sponsoring agency. A program sponsor has been defined as a professional person, an educator or psychologist, usually associated with a university who develops a curriculum, a set

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of teacher-training procedures, and takes responsibility for seeing
that the procedures go into effect in a given set of classrooms
(Macoby and Zellner, 1970, p.5).

Communities which applied for and received funds for Follow
Through classrooms were allowed to select the sponsor (or model)
which appealed to them; most chose to affiliate with a sponsor,
however, a few chose to be self-sponsored, implementing and man-
aging their own educational approach. Currently there are twenty
Follow Through sponsors annually serving nearly 80,000 children in
over 159 school districts throughout the United States.

The philosophy of planned variation coupled with extensive
longitudinal evaluation has made Project Follow Through a signifi-
icant and innovative compensatory educational program. Together
with the outside evaluations performed for the Office of Education
by independent research agencies, many sponsors also perform in-
house process and outcome evaluations of the effects of their model
implementation strategies. This paper will discuss the multi-
faceted evaluation strategy of one of the Follow Through sponsors--
Behavior Analysis (BA).

Behavior Analysis Follow Through

The Behavior Analysis program, located at the University of
Kansas (K.U.) initially began its role as sponsor in 1968 working
with five communities. At present BA works with fifteen projects
in twelve communities. Of the Follow Through sponsors, BA is one

of the more widely dispersed programs with projects in the rural

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Insert Table 1 about here

South, the industrial Northeast, the urban Midwest, and on Indian
Reservations in the West (See Table 1). The BA program annually
serves approximately 6,200 children in over 250 classrooms. The
children, Black (80%), White (10%), Indian (5%), and Puerto Rican
(5%), share one fundamental commonality which has been clearly
stated by Don Bushell, Jr. (1974, p.130), the originator of the
BA program, "all of them share a level of poverty that predicts
that they will fail in school unless we are able to make some very
basic changes." Bushell's claim that many of these children will
"fail in school" refers to the fact that in many of the schools in
which the BA program operates, "more than 20% of the children who
are in the fifth grade do not have beginning reading skills" (1974,
p.130).

Behavior Analysis has been called a new strategy for education
which combines traditional and innovative educational techniques
to provide a unique type of learning opportunity for young chil-
dren. While many of the basic principles of the model were drawn
from modern learning theory, the BA program is based on the prin-
ciples and procedures of the branch of psychology known as applied
behavior analysis which focuses on developing and implementing

empirically-based solutions to socially-significant problems.

Behavior Analysis combines aspects of team teaching, small
group instruction, non-graded classrooms, individualized instruc-
tion, programmed instruction, recommended curriculums, a token
reinforcement system, an individualized curriculum targeting pro-
cedure with regular progress reports on each child's academic pro-
gress, and parental participation (Bushell & Ramp, 1974). The pro-
gram emphasizes the teaching of basic academic skills such as read-
ing, arithmetic, handwriting, and spelling. Each classroom is
staffed by a teaching team consisting of a certified teacher who
leads the team and is primarily responsible for reading instruction,
a paraprofessional teacher's aide who guides the arithmetic instruc-
tion, and one to two parent aides who are responsible for spelling,
handwriting, and individual tutoring.

The curriculum materials recommended for use in BA classrooms
were selected because they create a favorable learning situation
for each child and contribute to reaching specified and measurable
instructional objectives. In other words, curriculum materials
were selected which best fit the classroom instructional approach
and the program goals.

Program Evaluation

The Behavior Analysis model is supported by a multifaceted
evaluation strategy, predicated upon four systematic process and
outcome evaluation techniques. As shown in Figure 1, the four basic

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Insert Figure 1 about here

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evaluation strategies are:, classroom observation, continuous pro-

gress assessment, annual achievement testing, and an annual con-

sumer evaluation. Each serves a unique function, is used on a

continuous and regular basis, and is designed to complement the

others. Table 2 presents a summary description of the key param-

eters of the four evaluation strategies.

Insert Table 2 about here

The effectiveness of any social service program is most ac-

curately judged in terms of a combination of measures which con-

sider the various dimensions of "effectiveness," e.g., test data,

satisfaction data, curriculum progress data and model implementa-

tion data. The multifaceted evaluation strategy of the BA program

has been designed to consider all of these dimensions. This par-

ticular combination of process and outcome evaluations appears to

be of tremendous educational significance in terms of the amount

and type of data collected, the overall scope, and as a demonstra-

tion of a model of an in-house evaluation stragegy that is adapt-

able to any educational setting.

The results of the BA program over seven years, determined by

the four evaluation strategies, indicate that it has been a suc-
cessful educational intervention strategy. For example, the
achievement test data have consistently demonstrated that the BA
children significantly out perform their non-BA counterparts; con-
sumer evaluation data have indicated a high level of satisfaction
with the program purposes, procedures, and effectiveness. Inde-
pendent, outside evaluations have corroborated these data. One
outside evaluation concluded that the BA program has been emi-
nently effective in improving academic functioning and is a valu-
able educational experience (Levitt, 1974, p. 13). Evaluations
have also indicated a high level of model implementation by the
classroom teaching teams (Stallings and Kaskowitz, 1974).

The remaining sections of the paper will present a brief
description of the four in-house, evaluation strategies which
together comprise the BA multifaceted evaluation system.

Classroom Observation

A social intervention program as large and widely dispersed
as the Behavior Analysis program faces a considerable problem in
maintaining the integrity of the program model at all of its sites.
This problem necessitated a procedure that would assure the replica-
tion of the model at all BA sites effectively, economically, and
with minimum supervision by the University of Kansas. Thus, a
strategy calling for direct observation of the classroom by trained
on-site personnel, staff trainers, was designed and implemented.

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The purpose of this strategy is to assist in the training of new classroom personnel, assure model replication across all classrooms, and certify BA teachers. This strategy is based on two sets of performance criteria.

The first set of performance criteria is the Instructional Teaching Criteria; these nine criteria specify the appropriate instructional behavior defined by the BA model. Table 3 lists the nine criteria. Observations made by the staff trainers must result

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Insert Table 3 about here

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in a "yes" response to each of the criteria. Immediately following an observation, the trainer provides feedback to the teacher beginning with the positive aspects, and then, if necessary, the areas where corrective action is needed.

A second set of performance criteria is used to evaluate the operation of the classroom motivation (token) system. Table 4 lists the eleven Exchange Teaching Criteria. If observations pro-

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Insert Table 4 about here

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duce "yes" responses to each item, the trainer is assured that the motivational system is functioning properly.

If the teacher meets all of the criteria on both performance

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measures during the two observations, the performance is acknowl-
edged by a Behavior Analysis Certification form and a letter of
commendation. Copies of the letter are also sent to the principal
and to the district offices for placement in the teacher's person-
nel file. The certification procedure is repeated annually; ob-
servations are made as frequently as necessary to insure proper
model implementation.

A set of training manuals written specifically for the BA
trainers, describe the training, observation, and corrective pro-
cedures in detail (Nelson, Saudargas, and Jackson, 1974; Jackson,
Minnis- Hazel, and Saudargas, 1974). Generally, these manuals
specify a three-step procedure used both to train new teachers and
to monitor the performance of experienced teachers. These steps
are to: (a) provide a rationale for the desired performance, de-
scribe the desired behavior, and set a criterion for the behavior;
(b) model the desired behavior and allow the trainee to try it;
and (c) provide the trainee with feedback and praise.

These training and monitoring procedures are supported by
formal and informal observations by a training consultant (District
Advisor) from the University of Kansas. Each BA site is served by
a consultant who uses the telephone, mails, and monthly visits to
the site to monitor the overall model implementation and to insure
that the local project staff are receiving appropriate in-service
support and technical training.

Despite a programs' rhetoric and intentions, actual class-
room instruction may bear little resemblance to the intended model.
The systematic classroom observations used in the BA program pro-
vide the needed quality control to insure model implementation.
This type of process evaluation makes it possible for local train-
ing personnel to immediately begin to remediate problems as they
are observed.

Continuous Progress Assessment

The most commonly used evaluative instrument in classrooms is
the standardized achievement test. These tests, prepared by spe-
cialists, are administered to "provide information about how a
child or a group of children at any grade level compares with sim-
ilar children throughout the nation in the skills which the instru-
ment measures" (Bushell, 1973, p.37). The results of standardized
achievement tests are useful in making administrative decisions, in
generally identifying gross weaknesses and outstanding performance,
and in making general statements about group performance. However,
"The difficulty is that they tell you nothing about why the results
turn out as they do, nor do they suggest how to change the results
on future occasions" (Bushell, 1973, p.38). Although achieve-
ment tests do serve a purpose, teachers need a diagnostic instru-
ment that suggests treatments.

With this in mind, the BA program turned to a continuous pro-
gress assessment procedure which utilizes a computer-based system

for monitoring the academic progress of each child and classroom toward daily, weekly, or biweekly goals. By meeting the goals it is assured that the child will have completed a specified amount of curriculum material during the year. Briefly, this procedure is based on establishing a year-end goal for each student, dividing the curriculum into small, uniform segments, and establishing a criterion for the successful completion of each segment. Periodic, curriculum-imbedded tests that measure comprehension assure that the child masters each unit before beginning the next one. This procedure allows children to work individually at their own pace toward their individual year-end goal.

The continuous progress assessment strategy is known as the Behavior Analysis National Communication System (BANCS). The system, a fully operational communications network consisting of data transmission and receiving devices located in all BA school

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Insert Figure 2 about here

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districts which are connected to K.U., allows the transmission of book and page curriculum placement data between the projects and K.U. As shown in Figure 2, the curriculum placement data flows from the classroom through the communications system to the computation center at K.U. The processed data are then sent back to the school district for the teacher to use. The entire process

from data collection in the classroom to receipt of the processed data by the teacher is accomplished in approximately 30 hours.

The continuous progress assessment strategy and year-end targeting procedure which by necessity is curriculum specific, begins by dividing each book into a series of equal steps. The equality of the steps is based on the time that it takes to complete a step rather than on the number of pages in a step. result is a uniform set of steps, which vary in number of pages, each of which takes no longer to complete than the other. Figure 3 shows the expected entry and exit level by grade level and the expected rate of step completion per week for the reading curriculum.

Insert Figure 3 about here

Setting year-end goals for one grade produces an entering placement position for the next. The difference between the entering and exit steps is the number of steps to be completed during each year. For kindergarten, using reading curriculum "A," as shown in Figure 3, this procedure results in a rate of .528 steps per week. For first grade, .473; second grade, .417; and third grade, .407 steps per week.

If all children entered at the same level and made the same amount of progress each week, then planning to this point would be sufficient. However, it is inappropriate to expect all chil-

dren to make the same progress and to be at the same step by the
end of the year. It is appropriate though, to expect that each
child be given the opportunity to make as much progress as possible
and be assisted in doing so. What is required, then, are indi-
vidualized progress targets that are adjusted each week depending
upon how well the child did the previous week. At this point the
computer becomes an invaluable tool because it can be programmed
to analyze the current curriculum position of each child, relate
it to previous progress, check the year-end goal, and develop a
new weekly target! Since a child's entering placement could be
above, slightly below, or drastically below the expected entry
level, different targeting strategies are required.

There are three target options. Option A is the primary
targeting strategy and simply subtracts the entry level from the
previously computed year-end goal and divides the difference by
the number of weeks remaining in the school year. Children gen-
erally begin working under this option unless their records indi-
cate a low rate of progress.

Option D is a target plan which spreads the expected progress
requirement over two years. It is directed at those students
whose current placement is found to be below the expected place-
ment by more than half the number of weeks remaining in the year.
Under Option B, the expected rate of progress is extended over a
two-year period. The new rate is less than the child was expected

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to do under Option A but more than his current rate of progress.
The philosophy here is that being behind is no excuse for staying
behind. If the child progresses satisfactorily at the new rate,
he will reach the expected year-end goal for the subsequent grade
the following year. If the child's performance does not improve,
the teacher can choose to place the child under a special option
(explained below) whereby she selects the number of pages per day
that she wants the child to read. Options A and D are called the
automatic options because the computer selects them. It is pos-
sible for a student to begin on Option A, slide to D, and move
back to A by the end of the year.

The third option, Option O, is a teacher selected option and
is available for teachers to use generally with children having
extreme difficulty; however, it may also be used for a child whose
reading limits seem boundless. Under this option, any number of
pages can be selected as a target which then remains constant
throughout each targeting period until the teacher initiates a
change.

The information or feedback report received by each teacher
is output from the computer and immediately teletyped back to the
district for classroom distribution. The report is essentially a
continuously updated classroom roster showing the number of ab-
sences for each child, current curriculum placement, the book and

page progress since the last report, the number of pages that had been targeted for the child during the previous target period and the book and page placement (target) for the next target period.

The feedback report is a diagnostic instrument that suggests both group and individual treatments. For example, it is indispensable in a classroom in which the instruction is individualized. The report, showing the step that each child is working on, provides a recurring metric of the spread of the class across the steps; if a teacher is not individualizing the instruction, the children will tend to bunch up on a few adjacent steps. Also, if children spend too much time on certain steps, it may be a cue to redefine these units, or perhaps spend additional time in a group instruction going over some of the difficult concepts.

These data point out children who are lagging behind the rest of the class; a slow rate of progress may raise doubts if the child has mastered the previous skills necessary to complete the step on which he is currently working. A child who is outpacing his classmates may be in the wrong instructional sequence. His rapid progress is an indication that it may be possible for him to skip ahead to more advanced units.

In BA classrooms, teachers are requested to plot and keep track of the weekly step progress of their children on a specially prepared step-progress chart. This information becomes a convenient measure of the overall class progress. Also, a line is drawn

on the chart from the expected entry step to the expected exit step. By regularly checking the progress of the median child against the slope connecting the entry and exit steps, the teacher can readily determine how the class is progressing toward their exit level for that grade.

BANCS provides a continuous record of class and individual performance which can be used to evaluate the effectiveness of various instructional procedures. It has been noted that a most important feature of the feedback report is that it

> "provides exactly the kind of feedback to the teacher that helps refine and improve the structure and content of an instructional sequence each time it is used. Rather than shifting from one technique to another on the basis of fad or the latest cute idea from the teacher's lounge, changes can be based on data which progressively makes the entire sequence more effective (Bushell, 1973, p.42).

National Achievement Testing Strategy (NATS)

The second evaluation technique is the annual testing of BA children and a comparable sample of non-BA children on a standardized achievement test. The test results, used solely for program evaluation, also allow a comparison to national test norms. The achievement test results are not used to make individual decisions about a child's abilities but only to provide an indication of program effects by grade level, school district, and across the entire program. A unique aspect of this testing program is the definition of each entering kindergarten group as a cohort which

is tracked through successive years in the program. This proce-
dure allows various comparisons of children in terms of the number
of years of continuous experience in the program.

It was, and still is the case that in twelve school districts
served by the BA program, no fewer than seven different achieve-
ment tests are used and, of course, are administered at various
times during the year. Since the BA program is so widely dispersed,
it became obvious that it would be impossible to make any definite
achievement statements given the variety of instruments used.
With the approval of each district we instituted the National
Achievement Testing Strategy (NATS) which uses the same achievement
test administered during the ninth month of each school year.

The Wide Range Achievement Test (Jastick, Bijou, & Jastick)
is the basis of NATS. The WRAT is a nationally known and widely
used evaluative instrument with a set of national norms. One
advantage of the WRAT is that its structure allows children from
pre-kindergarten through fifth grade to take the identical sections
of the test (Level I). This eliminates the necessity of artifi-
cally adjusting scores across grade level tests. From an economic
standpoint, the WRAT is relatively inexpensive and is easy to ad-
minister.

To insure reliable and consistent administration of the test
across all sites, BA has developed its own tester training package
consisting of instructional booklets and quizzes, videotapes, and

practice testing sessions (Mohamoud, Skinner & Weis, 1974 & 1974a).
A local testing supervisor and testers who generally have had some
experience with the WRAT are hired by each local project to admin-
ister and grade the tests: Three-day tester training sessions are
conducted by the testing supervisor, and when necessary, by a K.U.
training team. Each tester is quizzed on the specially prepared
administration and grading manuals, views the videotapes which
demonstrate proper administration and grading procedures, and ad-
ministers the WRAT to a child in a practice session. Only those
testers who meet the specified criteria are allowed to participate
in the testing program.

Upon receipt of the completed and graded tests at K.U. the
BA evaluation staff assigns an identification number to each stu-
dent in order to identify the data for future analyses. Tests are
also checked to see that all relevant demographic information have
been provided. Each test from each class is then thoroughly re-
graded. If an error is confirmed the child's score is changed to
a "No Score" and is not included in subsequent analyses. Generally,
the overall error rate is approximately 5%.

Grade equivalent scores, provided by the WRAT, are calculated
by determining the mean raw score for each cohort which is then
converted to a mean grade equivalent score. Project scores and a
summary of national test scores are distributed to each district.

Consumer Satisfaction

Most programs are evaluated in terms of how well they ac-
complish their intended purpose; if the evaluation is favorable,
then the program is generally considered successful and beneficial.
However, one might argue about the validity of a "successful pro-
gram" in the absence of any data which demonstrates the satisfac-
tion of the program consumers. In other words, it is plausible
that a program has achieved its purpose but the consumers are dis-
satisfied with the procedures used or some other aspect of the
program; it is insufficient to believe that the ends justify the
means. The measurement of consumer satisfaction is as important
an indicator of "success" as any other evaluation measure.

The Behavior Analysis program uses a survey of consumer satis-
faction to measure or evaluate the social validity of the program.
In a general sense, social validity refers to the opinion or
judgment of consumers and relevant observers about the purpose,
procedures, and the effects of a social intervention program. Con-
sumer satisfaction then is a subjective measure of various aspects
of a program gained by survey analysis. Such a survey may be done
as a one-shot survey or, more preferably will be built-in to the
program as a recurring evaluative procedure designed to provide
continuous feedback to the program managers.

'The purpose of the consumer satisfaction survey called the
Annual Consumer Evaluation or ACE is to measure consumer satisfac-

tion with the BA instructional model, the services provided by the University of Kansas Support and Development Center for Follow Through, as sponsor to the local districts, and the services provided by the BA staff at each local site. Also, this device provides consumers with a "sounding board" whereby they have the opportunity to feedback their opinions and comments about the program.

Consumers of the program are: the children, their parents, BA teachers and aides, BA trainers, Project Directors, school district administrators, and non-BA teachers and children in the schools in which the program operates. In all, there are seven categories of consumers or respondents. The ACE attempts to survey the total population of consumers--a total of about 10,000 respondents.

Questionnaires were designed for each respondent category. Each questionnaire, except for the childrens' consisted of standard background information questions and from three to six program evaluation questions. Where possible all respondents were asked the same or similar questions. A space for comments was provided next to each question. A Likert-type seven category response set from "completely satisfied" to "completely dissatisfied" was used (Likert, 1932). A response of "6" (satisfied) was chosen as the level of satisfaction that we would like to achieve.

Questionnaires are mailed to the sites to be distributed to the respondents by a local project staff member, together with a,

set of instructions and a cover letter. The letter notes that we
are interested in the respondents' open and honest opinions, and·
that anonymity will be guaranteed. The completed questionnaires
are returned to K.U. for analysis.

The children's questionnaires are handled differently. Since
all BA children and a comparison group of non-BA children are
given an achievement test annually, the testers are instructed to
ask the children five brief questions and record their responses
on .their test. These data are collected and analyzed after the
tests are returned to R.U.

We feel that the ACE is unique in that few school systems or
educational programs measure consumer satisfaction and fewer yet
survey the total population of consumers along the three dimensions
of purpose, procedures, and effects. Whether or not we can ulti-
mately satisfy all the consumers remains to be seen. But a survey
such as the ACE provides the foundation to obtain the data neces-
sary to correct any aspect of the .program that is judged unsatis-
factory. It is important to emphasize this aspect of the consumer
satisfaction survey, that is, that the data derived from the sur-
veys are used to improve unsatisfactory aspects of the program.

Conclusion

Since its beginning the overriding goal of the Behavior Anal-
ysis program has been to provide the children served with an edu-
cational program that would insure a level of functioning in the

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basic academic skills comparable to non-poor, "middle class" children. Succinctly, this goal has been to provide a year's worth of academic achievement for each year in school.

The success of the BA program is in large part due to the systematic and comprehensive evaluation strategy which allows a regular and recurring flow of data used to monitor various aspects of the program, and as a basis to initiate change. In an era of uncertainty about the most effective and efficient way to educate children, and with a heightened need to sort out the effective from the ineffective models, the need for comprehensive, data-based evaluation is paramount.

Program evaluation is a complex and unsettled "art." Because of this, there are those who argue against any rigorous form of evaluation--they would, so to speak, throw out the baby with the bath water. The BA program is well-aware of the many pitfalls involved in evaluation but strongly believes there is no other way to gauge program effectiveness; in the absence of, or with incomplete evaluations, no questions will ever be answered.

References

Bushell, D., Jr. Classroom behavior: a little book for teachers.
Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973

Bushell, D., Jr. The design of classroom contingencies. In Keller,
F. and Ribes-Inesta, E. (Eds.) Behavior modification: applica-
tions to education. New York: Academic Press, Inc., 1974,
127-142.

Bushell, D., Jr., & Ramp, E. A. The Behavior Analysis classroom.
University of Kansas Support and Development Center for Fol-
low Through, Department of Human Development, University of
Kansas, Lawrence, Kansas 66045, 1974.

Jackson, D. A., Mirnis-Hazel, M., & Saudargas, R. A. A guide to
staff training. University of Kansas Support and Development
Center for Follow Through, Department of Human Development,
University of Kansas, Lawrence, Kansas, 66045, 1974.

Jastak, J. F.; Bijou, S. W.; & Jastak, S. R. Wide Range Achieve-
ment Test, Guidance Associates, Wilmington, Delaware, 1965.

Levitt, E. E. Report of the evaluation of the Indianapolis public
schools Follow Through program. Unpublished study, 1974.

Likert, R. A technology for the measurement of attitudes. Ar-
chives of Psychology, 1932, No. 140.

Maccoby, E. E., & Zellner, M. Experiments in primary education:
aspects of Project Follow Through. New York: Harcourt Brace
Jovanovich, 1970.

Mohamoud, J., Skinner, B., & Weis, L. Behavior Analysis WRAT ad-
ministration manual: individual administration, kindergarten
and 1st grade. University of Kansas Support and Development,
University of Kansas, Lawrence, Kansas, 66045, 1974.

Mohamoud, J., Skinner, J., & Weis, L. Behavior Analysis WRAT ad-
ministration manual: group administration, 2nd, 3rd, 4th,
and 5th grades. University of Kansas Support and Development
Center for Follow Through, Department of Human Development,
University of Kansas, Lawrence, Kansas, 66045, 1974.

Nelson, A., Saudargas, R. A., & Jackson, D. A. Behavior Analysis
certification: observation and training procedures for the
staff trainer.

Stallings, J. A., & Kaskowitz, D. H. Follow Through classroom
observation evaluation 1972-1973 (SRI Project URU-7370).
Menlo Park, California: Stanford Research Institute, August,
1974.

Footnotes

Figure Captions

Figure 1. The four evaluation strategies of the Behavior Analysis program.

Figure 2. The path traveled by the BANCS data from classroom to K.U. and back to classroom. Dotted lines indicate path of raw data; the solid lines, processed data; and the solid, wavy lines indicate a personal contact rather than an actual delivery of processed data.

Figure 3. Yearly target slopes for reading curriculum "A" from entry level to exit level (year-end goal).
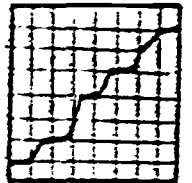
BA MULTIFACETED EVALUATION STRATEGY
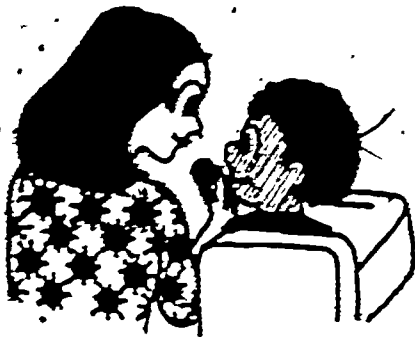
is
model
implemented
appropriately?

CLASSROOM OBSERVATION

are
children
progressing?

CONTINUOUS PROGRESS ASSESSMENT
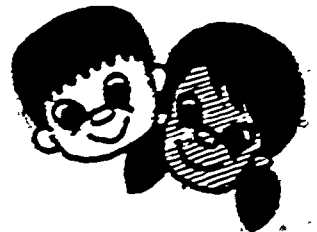
is the program
effective?

ANNUAL ACHIEVEMENT TESTING

are the consumers
satisfied?

ANNUAL CONSUMER EVALUATION

BANCS PATH

The Classroom

analyzed data | raw data

Staff Trainer

Evaluation Aide

Principal

Teletype and OpScan

District Advisor (consultant)

Mini and Main Computers

Data Bank
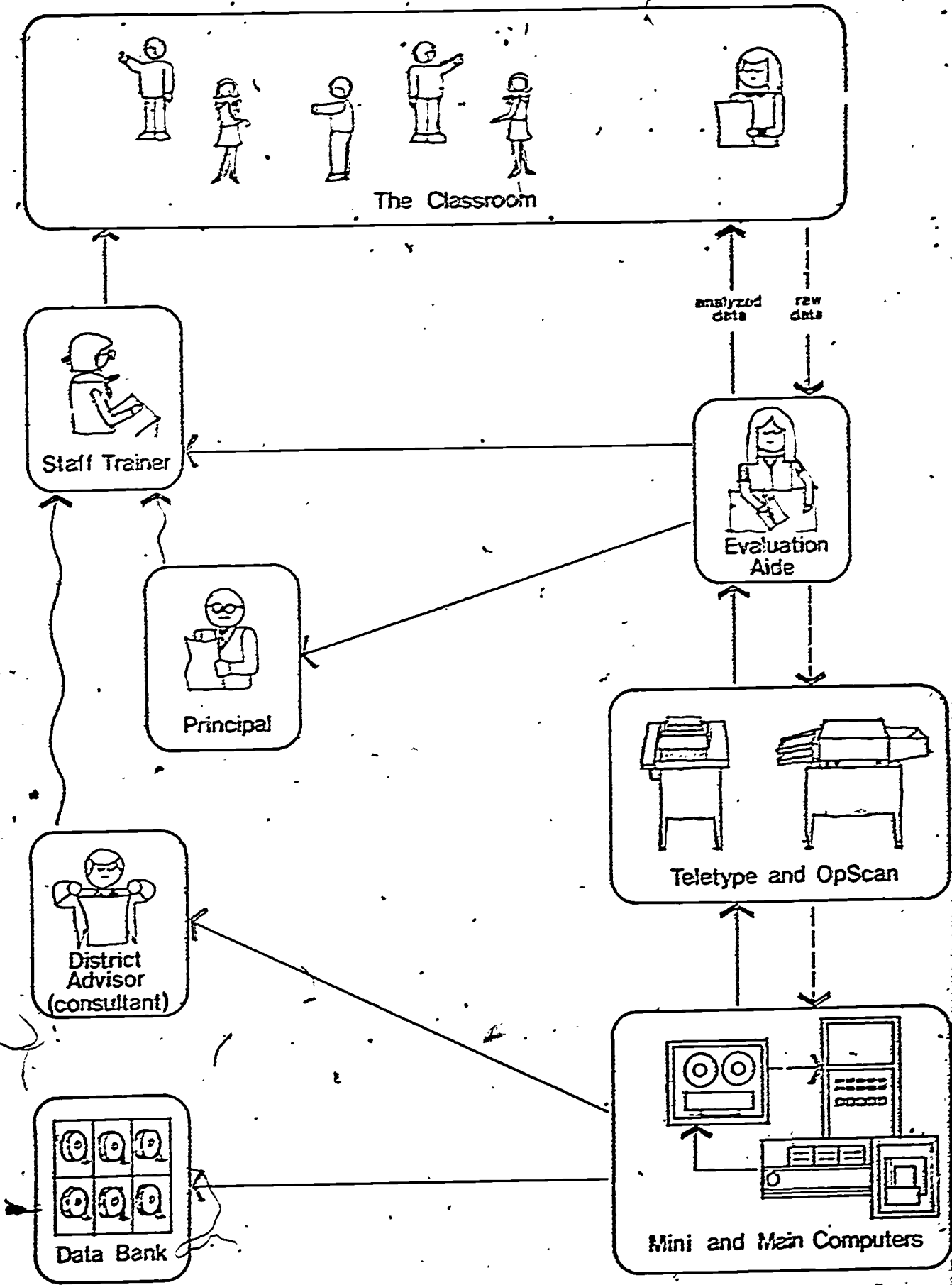
BANCS
YEARLY READING TARGETS

BOOK #

STEP #

23 —

— 60

3rd (.407 Steps / Wk)

.20 —

— 50

36 —

2nd (.417 Steps / Wk)

12 —

— 40

8 —

1st (.473 Steps / Wk)

— 30

4 —

3 —

— 20

2 —

1 —

Kg. (.528 Steps / Wk)

— 10

1A
Pr.

0   9   18   27   36

SCHOOL   WEEKS

30
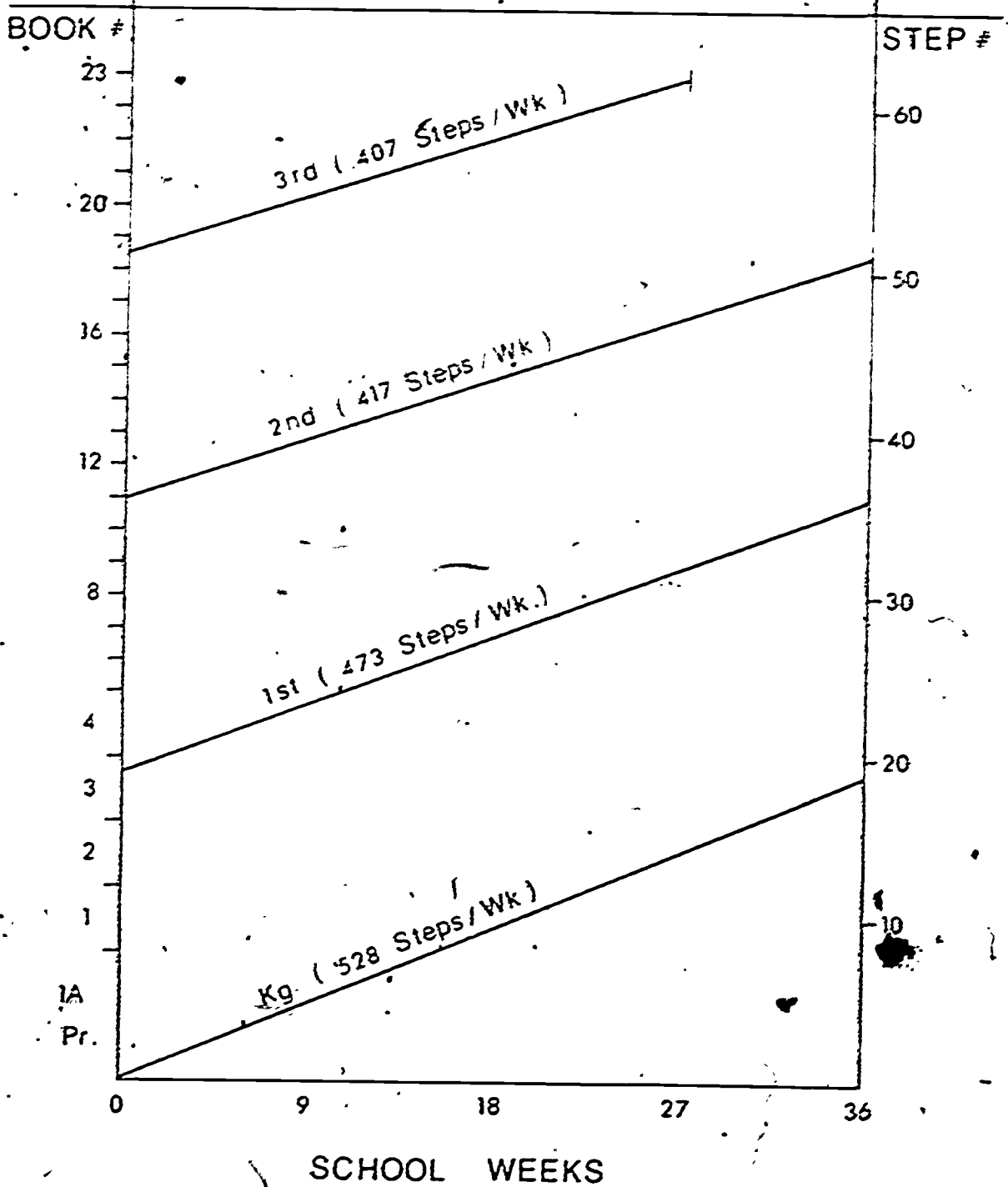
TABLE 1

BEHAVIOR ANALYSIS
FOLLOW THROUGH PROJECTS IN OPERATION

1975-76

LOCATION	SCHOOLS	CLASSES (K-3)	CHILDREN
*BRONX	2	19	580
*HOPI RESERVATION, ARIZONA	5	21	298
INDIANAPOLIS, INDIANA	4	15	386
KANSAS CITY, MISSOURI	4	25	538
LOUISVILLE, KENTUCKY	4	21	624
MERIDIAN, ILLINOIS	2	19	366
NORTHERN CHEYENNE, MONTANA	3	11	271
PITTSFIELD, MASSACHUSETTS	2	8	157
*PHILADELPHIA, PENNSYLVANIA	3	47	1324
*PORTAGEVILLE, MISSOURI	1	16	384
*TRENTON, NEW JERSEY	8	36	849
WAUKEGAN, ILLINOIS	1	22	496
TOTALS	39	268	6273

*Program initiated in the fall of 1968. All other programs initiated
the fall of 1969.

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Table 2

BAFT PROGRAM EVALUATION

Evaluation Strategy	BA System	Type of Evaluation	Data Collected	Type of Data Collected	N Size	Subjects
Classroom Observation	Training and Monitoring	Process	Bi-Weekly	Observation Data		Teachers, Children
Continuous Progress Assessment	BANCS[1]	Process	Weekly	Curriculum Placements	6,273	Children
Annual Achievement Testing	NATS[2]	Outcome	Annually	Achievement Test Scores	11,488	Children
Annual Consumer Evaluation	ACE[3]	Process and Outcome	Annually	Question-naires	10,720	All Program Consumers

[1]Behavior Analysis National Communication System
[2]National Achievement Testing Strategy
[3]Annual Consumer Evaluation

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Table 3

Instructional Teaching Criteria*

1. 80% of the children are on-task.

2. 100% of teacher's contacts are to children who are on-task.

3. 100% of teacher's contacts contain praise.

4. 100% of tokens given out are paired with praise.

5. 90% of teacher's contacts that include prompts also contain descriptive praise and tokens.

6. None of teacher's contacts are disapprovals.

7. Time-out procedures, if needed, are used appropriately. (See Bushell, 1973, pp. 75-78).

8. Four children in group, selected randomly, are working at 80% accuracy.

9. For a period of four weeks, the percentage of children "on-target" in the teacher's instructional groups must be 80%, as calculated by the computer.

*Abstracted from Nelson, Saudargas, and Jackson, 1974, p. 4.

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Table 4

Exchange Teaching Criteria*

1. Back-up reinforcing activities are prepared and ready prior
   to the start of the instructional period.

2. Prices and content of the back-ups vary at two exchange periods
   observed on the same day.

3. Prices vary for each instructional group.

4. Prices are the same for all children within each group.

5. Children are free to choose any activity for which they have
   enough tokens.

6. Children with too few tokens sit quietly during the exchange
   period.

7. The first child in a group who is ready to exchange is al-
   lowed to do so without waiting for the other children to get
   ready.

8. At least one back-up contributes to a relevant academic skill.

9. Adults participate in the back-up activities.

10. Teachers give praise for appropriate play during exchange
    periods.

11. At the end of the exchange, instruction begins with the first
    child who comes to the table.

*Abstracted from Nelson, Saudargas, and Jackson, 1974, p. 5.

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